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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/875,204

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Herbert Heyneker

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EXAMINER

LUDLOW, JAN M

ART UNIT

PAPER NUMBER

1797

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/875,204	<b>Applicant(s)</b> HEYNEKER ET AL.	
	<b>Examiner</b> Jan M. Ludlow	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 64-100 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 64-100 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 7, 2008 has been entered.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 64-100 are rejected under 35 U.S.C. 103(a) as being obvious over Harris et al (USP 4,871,683) in view of Raysberg et al (USP 5,106,583) and Brennan (US 5,472,672).

Harris et al disclose a reaction system substantially as claimed. The system comprises a carousel 12 with a plurality of reaction mounts 20 holding solid support (filter 22 or other supports (col. 4, line 26)) in well 58 arranged on the radius of the carousel, a rotator 74, 76 that rotates the carousel step-wise around the axis, a fluid delivery system 100 that delivers liquid to the reaction well, a drain system 112, 114 that drains the liquid by differential pressure from the well, optical analyzer (col. 6, lines 50-65), temperature control (col. 7, lines 25-30), and a programmable digital computer that controls the system 162 (columns 3-7, Figs 1, 4-5). The through hole 60 in the carousel which holds the reaction mount 20 constitutes the instant conduit and the portion below support 22 constitutes the chamber. In Figures 2 there is a collection volume (instant chamber) having ribs 44, 46 in it in element 18 below the reaction mount 20, which volume is also within the carousel as shown in Figures 4, 5. Alternatively, the insertion of part 18 into the carousel "forms" the claimed conduit and chamber in the carousel. Outlet 40 protrudes from the carousel as claimed. A plurality of drain lines connected to drain receptacles 112, 149 as claimed are shown in figures 4-5, col. 6, lines 19-68. Differential pressure is by e.g., air pressure from pump 118, 148 or gravity.

Harris fails to teach plural wells per mount with a common drain or radially moveable dispense heads or movement of the drain receptacles.

Raysberg et al teach a carousel 19 with a plurality of reaction mounts with reaction wells 3 arranged on the radius of the carousel, a rotator that rotates the carousel step-wise around the axis (column 4, lines 32-41), a fluid delivery system 33 that delivers liquid to the reaction wells, a drain system 35 that drains the liquid by differential pressure from the wells, a programmable digital computer that controls the system 153 (columns 3-7, Figs 1, 4-5). The fluid delivery system is moveable radially as shown at arrow 113 of Figure 1d, and into and out of engagement with the mount (col. 2, lines 40-50).

Brennan teaches a device for processing samples in filter wells 26 in communication with common drain chamber 81. Brennan further teaches nucleic acids attached to solid supports such as controlled pore glass and acetonitrile in the wells. Nucleic acids of various chain lengths are synthesized.

It would have been obvious to provide plural reaction wells in a sample mount of Harris as taught by Raysberg in order to increase carousel capacity. It would have been obvious to make the dispenser of Harris moveable up and down and radially moveable as taught by Raysberg in order to access the mounts and/or remove the dispenser from the carousel as shown by Raysberg. It would have been obvious to move the drain 112 of Harris with respect to the carousel in order to use vacuum instead of or in addition to pressure to drain the mounts as taught by Raysberg. It would have been obvious to provide the wells in communication with a common drain

chamber in order to simultaneously remove fluid from the wells as taught by Brennan. With respect to 16 wells, in that the prior art teaches a plurality of wells, it is not seen as a patentable distinction to select a particular number of wells in order to process as many samples on the carousel as possible. It would have further been obvious to provide nucleic acids of varying lengths on solid supports (including the well known polymer supports, such as polystyrene or cellulose or nitrocellulose) and acetonitrile in the wells in order to use wells to synthesize nucleic acids as taught by Brennan.

6. Claims 64-100 are rejected under 35 U.S.C. 103(a) as being obvious over Feygin et al US006890491 in view of Raysberg (USP 5,106,583) and Brennan (US 5,472,672).

Feygin teaches carousel 64 with conduits 22 forming a cavity beneath reaction mounts 10 having drainage holes 15. Exit ports 29 on the carousel communicate with engagement ports 28 for drainage. Plural dispensing stations 32 communicate with the reaction mounts via table 66. Temperature controller 70 is provided. An optical sensor may be provided to monitor whether an appropriate vessel for synthesis is present (meeting the broad limitation of “adapted to analyze ... synthesis”).

Feygin fails to teach plural wells per mount with a common drain chamber or radially moveable dispense heads or raising/lowering of the drains.

Raysberg et al teach a carousel 19 with a plurality of reaction mounts with reaction wells 3 arranged on the radius of the carousel, a rotator that rotates the carousel step-wise around the axis (column 4, lines 32-41), a fluid delivery system 33 that delivers liquid to the reaction wells, a drain system 35 that drains the liquid by differential pressure from the wells, a programmable digital computer that controls the

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system 153 (columns 3-7, Figs 1, 4-5). The fluid delivery system is moveable radially as shown at arrow 113 of Figure 1d, and into and out of engagement with the mount (col. 2, lines 40-50).

Brennan teaches a device for processing samples in filter wells 26 in communication with common drain chamber 81. Brennan further teaches nucleic acids attached to solid supports such as controlled pore glass and acetonitrile in the wells. Nucleic acids of various chain lengths are synthesized.

It would have been obvious to provide plural reaction wells in a sample mount of Feygin as taught by Raysberg in order to increase carousel capacity. It would have been obvious to make the dispenser of Feygin moveable up and down and radially moveable as taught by Raysberg in order to access the mounts and/or remove the dispenser from the carousel as shown by Raysberg. It would have been obvious to raise/lower the drains of Feygin with respect to the carousel in order to use couple the vacuum to drain the mounts as taught by Raysberg.

It would have been obvious to provide the wells in communication with a common drain chamber in order to simultaneously remove fluid from the wells as taught by Brennan. With respect to 16 wells, in that the prior art teaches a plurality of wells, it is not seen as a patentable distinction to select a particular number of wells in order to process as many samples on the carousel as possible. It would have further been obvious to provide nucleic acids of varying lengths on solid supports (including the well known polymer supports, such as polystyrene or cellulose or nitrocellulose) and

acetonitrile in the wells in order to use wells to synthesize nucleic acids as taught by Brennan.

7. Applicant's arguments filed February 7, 2008 have been fully considered but they are not persuasive.

8. Applicant argues that the examiner has not shown plural moveable stations above the reaction mounts, but both Harris and Raysburg teach plural stations above the carousel, and Raysberg teaches making the station heads, such as dispense heads, moveable radially and up and down in order to reach the wells in the mounts, which is the motivation to make stations moveable, which is found in Raysberg, and would obviously be applicable to Harris were Harris modified to include plural wells in each mount, which plurality of wells are taught by Raysberg.

9. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The "why" of modifying Harris by combining is briefly summarized (and italicized) here: plural wells *in order to process more samples*, moveable heads *in order to reach the wells* (both taught by Raysberg) and a common drain *in order to efficiently collect waste* (Brennan). None of these modifications to Harris is inventive because



they are taught by the prior art and the motivation would be clear to one of ordinary skill upon reading the teaching references.

10. Applicant argues that the examiner has not shown plural moveable stations above the reaction mounts, but both Feygin and Raysburg teach plural stations above the carousel, and Raysberg teaches making the station heads, such as dispense heads, moveable radially and up and down in order to reach the wells in the mounts, which is the motivation to make stations moveable, which is found in Raysberg, and would obviously be applicable to Feygin were Feygin modified to include plural wells in each mount, which plurality of wells are taught by Raysberg.

11. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The "why" of modifying Feygin by combining is briefly summarized (and italicized) here: plural wells in *order to process more samples*, moveable heads *in order to reach the wells* (both taught by Raysberg) and a common drain *in order to efficiently collect waste* (Brennan). None of these modifications to Feygin is inventive because they are taught by the prior art and the motivation would be clear to one of ordinary skill upon reading the teaching references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-1260. The examiner can normally be reached on Monday, Tuesday and Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jan M. Ludlow  
Primary Examiner  
Art Unit 1797

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